

suggests any means to decide reactions to external conditions or to them.

- 3) All such "stimulations" are without any directional significance.
- 4) The stimulations (a buzzing noise from one place anywhere in the mouth) are not indicative of any directional magnitude, direction, speed or body attitude.
- 5) Nothing in Knierim's oral buzzing has any relationship to "some spatial frame or reference relatable to an actual environment" or to "a discernable point".
- 6) There is nothing in Knierim's oral buzzer's "actual (external) environment" that has any effect on anything Knierim does. Nothing in the buzzer sound is "perceptible to the brain as related to a discernable point whose positions may be perceived in some spatial frame or reference relatable to an actual environment"

Knierim is a timer and magnet-proximity switched buzzer.

The office action also suggested that "The behavior controller means direct an action with instructions that include directions whose intent will be recognized intuitively due to graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment".

- A. Knierim neither has nor could accommodate (if he had it) knowledge of or data regarding "graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment".
- B. The term "graphically perceived points", in the context of the specification and in typical graphical and spatial applications, refer to spatial arrays. These are typically Cartesian matrices (ex: rows and columns) but can also be represented by polar coordinates (which are point-for-point identical to their Cartesian counterparts). What the term does not refer to is a single point such as a buzzer that is placed in no particular location.
- C. ~~Nothing in the~~ "graphically perceived points" (which is actually only the one singular location of the oral buzzer located just about anywhere in the mouth) is "related in the mind to desired actions spatial locations".
- D. Knierim's beeper is intended to be not an indicator of spatial positional relevance but simply "sufficiently irritating and, perhaps, embarrassing to causes the patient to prefer wearing the headgear over hearing a beeper inside his mouth". (Knierim Col. 2 line 25-28)
- E. There are no "actions" to be directed relative to positions "perceived in some spatial frame". There is only one action, i.e. put on the headgear. It is not related to any spatial reference.

Knierim is a timer and proximity switched buzzer.

Regarding the Knierim's battery: "The examiner considers this to be a power the provision of power where needed to the controller means." Applicant agrees is a battery connected to electronics. However, what it powers is not a spatial controller. Although it might be acceptable language to call both a bicycle and a

airplane a “vehicle”, that does not make them the same thing. Similarly, and proximity controlled buzzer’s circuit board (turning a buzzer on) and a multi-dimensional spatial calculation and signal directing system can both be called a “controller”, the similarity ends with the non-definitive label.

10. "Regarding claims 2-3, the examiner considers the magnetic communication between the mouthpiece (12) and the orthodontic headgear to be a communication means for communicating between the behavior controller and an external entity (the headgear), wherein the communication means is a ~~physical~~<sup>digital</sup> wireless or wired communication."

- A. This un-attenuated (fixed electromagnetic field) permanent magnet and uncharged, passive coil is not a "wireless means of data communication" by any communications standard of wireless communications either in terms of a data-driven electromagnetic induction (modulation) process in the "sender" or in the ability to demodulate data-driven attenuation.
- B. ~~The un-attenuated~~ completely passive coil couldn't even be equated to a telegraph means which can at least send and receive a ~~data-driven~~ signal.
- C. ~~The suggested~~ "communication means" has neither the means for creating 2 way communications nor for making use of such if it were ~~data-driven~~ inductive.
- D. ~~You don't "demodulate"~~ with a magnet. The magnet has no data reception means (and, of course, no parsing or interpreting means).
- E. The magnet is neither a sensor nor a logic controlled sender. It is neither end of a "communications means".
- F. The receiving end of the suggested "communication means" is defined by Knierim as "a magnetic switch" (Knierim column 4, line 41-42) not as a receiver (and certainly not as a sending unit).
- G. The inductive current rise that is "communicated" has nothing to do with spatial positions, directions, velocities, or anything resembling data beyond the "up" condition of an off-the-shelf proximity switch.
- H. The un-attenuated magnet and completely passive coil is, in fact, simply a common proximity switch; not to be confused with a data communication.
- I. ~~The fact~~ that a timer may ultimately trump the proximity switch's "up" position is irrelevant because the function that the switch in question performs is still only that of the common magnetic off/on switch.
- J. Like the earlier example of equating a bicycle with the means and embodiments of a jet airplane (somehow equating the two by simply calling them both "vehicles"), the temporal induction of a current around a passive, un-encodable coil nearing a completely un-attenuated magnet might be called "wireless communications" using extremely indistinct nomenclature.

There are, however, substantial foundational differences between the data-driven signal-encoded attenuation of a modulating and demodulating communications system from the function, purpose or scientific basis of a proximity switch.

11. "Regarding claim 6, the examiner considers the beeping alarm of Knierim to indicate a direction of the headgear relative to the user's head or mouth".

Applicant respectfully submits that:

Knierim states (column 4, lines 36-45) that "When the bow 16 and prongs 18 are positioned as shown in FIG. 1, a headstrap 26 extends around and behind the patient's head and places tension on the bow 16 to place a force on teeth 21 and, in this position, the bow 16 will place the magnet 14 in close proximity to the mouthpiece 12. The mouthpiece 12 includes a magnetic switch 27, a logic circuit 28, a battery 30 and a beeper speaker 32, all encapsulated within a plastic material such as methyl methacrylate that is commonly used in the field of orthodontics for appliances supported within the mouth of a patient. Preferably, the mouthpiece 12 is specially constructed in the lab to fit within a particular patient's mouth." Thus:

- A. The speaker/buzzer is not only fixed at a single location, but that location is also buried, literally molded "within a plastic material such as methyl methacrylate"
  - B. ~~The speaker~~ location is both static and insulated from any electronic stimulation to the wearer and any specific positional vibration communication to the wearer by the surrounding molded methyl methacrylate.
  - C. ~~The speaker~~ or buzzer, when the proximity switch and timer close the circuit, create a buzzing that has no data significance except the lack of directionality.
  - D. ~~The user~~ is unaware of any directionality responsive to the speaker
  - E. ~~Knierim's~~ system is equally ignorant of any directionality. It has no data to provide the user of directionality.
  - F. ~~There is no means to do anything with directional data even if it had some~~ (see above notes regarding the static, mold-encapsulated and insulated nature of the buzzer).
  - G. Further, Knierim's system is adequate only for recognizing proximity, not direction.
  - H. The headgear's magnet and the worn coil will induce a similar current even if the headgear is imperfectly centered. Thus, even if Knierim's system had the capacity to deal with directional data, which it does not, the directional data would be inaccurate.
- Engineers note: It would be theoretically possible for headgear position (not really direction) data more accurate than Knierim is capable of to be integrated between two distances separated magnets of precisely known position, field range and strength. However, it would be difficult to execute with precision in mouths of consistently non-standard shapes and sizes and in constantly moving and growing teenage mouths, the data so captured have nothing to do with the goals or claims of Knierim and, of course, Knierim did not intend to do so.
- I. ~~Knierim~~ teaches nothing regarding directional cognizance of anything at all; only the general proximity of a magnet to a near coil.
  - J. Knierim clearly teaches that the purpose of the un-attenuated magnet and the passive "switch" is to, given adequate proximity, simply close the circuit on the "magnetic switch" (column 3, lines 1-4).

- K. This unattenuated, binary, open or closed condition of Knierim's proximity switch neither provides nor teaches a means capable of accurately sensing the gradients of dynamic direction capture nor a method or means for communication of the substantially more data-intensive directional data.
- L. Nothing in Knierim teaches nor has the capacity for accurate directional sensing and, if it did, it has no means whatever for communicating anything beyond off/on proximity to the wearer.

12. "Regarding claim 13, the examiner considers the mouth piece (12) of Knierim to be arrayed in a roughly semi-circular area." Applicant respectfully submits that the mouthpiece is not an array of anything.

Claim 13 teaches and environment wherein:

"stimulation means or some subset of them are arrayed in a roughly circular or semi-circular area so that they may be related by the mind to direction; whereby a stimulation at a point in the roughly circular or semi-circular array corresponding to a direction in the current environment may be perceived as an indication of angle or degrees of change.

- B. The mouthpiece is not an array of "stimulation means" (nor a symmetric array of anything else; it is a block of methyl methacrylate with embedded battery, coil, circuit board and buzzer). The mouthpiece is a component chassis for non-specifically positioned parts, not an array of "stimulation
- C. ~~Nothing~~ on the eclectic component list for the block of methyl methacrylate has anything to do with an "array corresponding to a direction in the current environment" which "may be perceived as an indication of angle or degrees of change."
- D. Applicant respectfully submits that it is incorrect to equate a plastic component chassis of completely different, position irrelevant parts (none of which have anything to do with stimulation, symmetrically arrayed or otherwise) with an directionally-driven symmetric array of stimulators each having directional significance.

13. "Regarding claim 14, the examiner considers the magnet sensor disclosed by Knierim to be a first sensor means operatively connected to behavior controller means for sensing the direction of the body, whereby the behavior controller means can monitor and automatically respond to any instruction or speed followed." Applicant respectfully submits that:

- A. Claim 14 states: "The device of claim 1 further comprising: a first sensor operatively connected to behavior controller means for sensing the attitudes, or speed, or any combination thereof, of the body; whereby controller means can monitor and automatically respond to any instruction followed, or reward an instruction that was followed, or any combination thereof."

The magnet sensor disclosed by Knierim is neither taught to sense any of

above (even less any combination thereof) nor embodied in a form effective execution of any of them.

- B. Knierim's magnet and coil are not "for sensing the direction of the body". They have no idea what the body's current net vector of direction is nor or they capable of it. The 3 dimensional (x1,y1,z1) base point (base of directional vector) and three dimensional (x2, y2, z2) end point indicative of a "direction of the body" cannot be captured by the distance between a magnet and a coil (neither of which have anything to do with body
- C. The specification specifically indicates what is meant by "direction of the body" and it is not the distance between 2 elements in the mouth.
- D. The use of the word "means" in "first sensor means" directs the interpretation of the sensor's characteristics, functionality and purpose to those indicated in the specification of the current invention which are completely foreign to Knierim's proximity switch. The specification's discussion of means "for sensing the direction of the body" clearly have nothing to do with a proximity switch and much to do with the world outside the mouth (e.g. GPS [0031], distance sensors [0054] and attitude and direction sensors[0083]).  
Knierim's magnet and coil are not the specification's "sensor means" "for
- E. ~~Threshold directions of the body~~ The irrelevant distance between the magnet and the coil (which will normally be different for each customized mouth). Knierim teaches the involvement of an orthodontist to accommodate/customize around the infinite varieties in oral architecture and personalized setup and the distance between the magnet and coil will be within a tolerance driven by the threshold attenuation (which is a function of the standard magnet and the maximum tolerated distance to the coil). Not only is there no mechanical means in Knierim for reading the current and calculating the distance, that distance, even if it could be calculated by the not-present calculation means, would be irrelevant to the task of "sensing the
- F. ~~Direction of the body~~ direction of the body, previous sections above (and included by reference but not repeated here to reduce by pages the length of this response),  
the magnet sensor would have no capacity to deal with direction data even if it had any – it is a proximity sensor with no means for finding the data, no method for communicating it, and nothing to do with the data should it arrive at the "controller".
- G. The "magnet sensor" (described in ubiquitous references in the specification and claims) is exactly what Knierim called it: a "magnetic switch". I.e. an on-off, open or closed circuit indicative only of a threshold of proximity and both ignorant of and incapable of communicating directional data.

14. Applicant agrees that the cessation of a nagging buzz could be a positive reinforcement. However this is not a "stimulation that will be perceived as to the body" but the cessation of one that is negative.

Also, what it signals is neither spatial nor precise enough to be of any value in directing a body to perform spatially which is the context of both specification claims.

15. Examiner considers Levine's stimulator to be "stimulation means placed in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment with said stimulators being physically located on or proximate to parts of the body with adequate sensitivity to said stimulations; and a behavior controller means operatively connected to stimulation means for directing stimulations".

**Applicant respectfully submits that:**

- A. The potentially singular electrode of Levine is not “in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof”. It is not a formation of anything. It is simply an isolated electrode with no particular locational significance isotropically dishing out electricity on ~~Levine~~ ~~read from the~~ ~~vicinal~~ ~~process~~ spatial directions that would be dependent on the ability to provide “stimulations perceptible to the brain as a discernable point”. Although an understatement, this is analogous to replacing a compass with a light that comes on when you do bad (including wandering “out of bounds”). Rather than directing you x degrees to the right for a specific period to go around an obstacle and then y degrees left, Levine only “stimulates you” when you’re “out of bounds”.
- C. ~~Levine~~ does not provide or teach any means for knowing the azimuthal orientation of the wearer (radio waves are isotropic and pass through the wearer’s body). Thus, it is inadequate for providing a “spatial frame of reference relatable to an actual environment”. Levine can’t even give crude directions like “go a little to the left” much less provide anything “perceived in some spatial frame of reference relatable to an actual environment” that would allow the intuitive spatial perception applicable
- D. ~~Levine~~ ~~has~~ ~~no~~ ~~ability~~ to resolve to anything resembling a “discernable Levine’s worn assembly has no distance sensor whatever and, in fact, time-difference-of-arrival and/or triangulation of radio waves from a location. This information, even when the radio waves are not attenuated incident microwave corridors, path extended by indirect paths between tall adjacent building rows, is already too low in precision to provide (even if azimuth were known which it isn’t) gradient directional information to the navigate around objects whose size are below the Modulation Transfer (MTF) limited effective precision of the time-difference placement system.

In other words, Levine neither teaches nor provides a means capable of resembling any “discernable point” that might provide a spatial basis for

real-time spatial guidance around the obstacles of the wearer's environment.

- E. It is also neither the purpose of Levine or a teaching of Levine that a point would ever be identified. Levine is an "out-of-bounds" alarm with no spatial direction capacity designed or delivered.
- F. Points in the wearer's environment are not made "perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment". There is nothing graphical about Levine at any level. No perception of directions overlaid over an "actual environment" are possible. The wearer needs to find his own way back "in bounds".
- G. Because of all of the above, and, in particular, the complete lack of the elements needed for communicating a spatial or graphical perception of perceived points in the current environment, "the behavior controller means" cannot "direct an action with instructions that include directions whose intent will be recognized intuitively due to graphically perceived points which are related in the mind to desired actions or spatial locations in the current environment."

16. "Regarding claim 10, the system of Levine discloses a **series of points indicating** by the stimulation means that create the **perception** of a **line that indicate a distance to be achieved..**" None of the words in bold above are found anywhere in either the specification or claims. The word "stimulation" does occur but only once (col.11 line 61) and then very specifically identifying one and only one purpose: "to discourage the subject from using such substance" which is completely unrelated to navigational direction.

17. "...The examiner considers this [remote GPS location transmission] to be GPS means operatively connected through data transmission means to remote control means". This wording creates a straw man which would seem to disqualify anything with a GPS location transmission to a host. Even claim 22 is a subclaim of a subclaim, applicant respectfully takes issue to submit that claim 22 doesn't simply list such. Instead claim 22 differentiates the intent and design by indicating that this is part of the primary structure for allowing the system to "...manage the behavior of the body being directed with respect to a map, or a path, or a direction, or an area on the map, or any combination thereof by comparing the actual GPS position with a desired position **and directing the body accordingly.**"

Further, Levine has no directional control in excess of that of an "invisible dog fence" which simply penalizes the breach of a perimeter.

18. Claim 23 uses video to "...direct the body by sending stimulation instructions behavior controller". Levine has no navigational functions or aspirations but only

the camera to, optionally "if necessary" watch for misbehavior such as deliberate destruction". Further these cameras are neither dedicated to or body positioning or navigation – particularly when "scanning the surrounding not the body-position registered foreground image.

19. "The examiner considers this to be stimulation means placed in a formation conducive to providing stimulations perceptible to the brain as a discernable point, or points, or shapes, or any combination thereof whose positions may be perceived or learned to be perceived in some spatial frame of reference relatable to an actual environment with said stimulators being physically located on or proximate to parts of the body with adequate sensitivity to said stimulations; and a behavior controller means operatively connected to stimulation means for directing stimulations." Watson's barking collar is blind to any and all positions, discernable points, or any spatial reference frames. If the dog barks or makes a bad noise, he hears a sound that has nothing to do with positions or physical or dimensional frames of references of any kind. An "interval of time" determines the bad behavior (too often is bad) and delays or eliminates responses based on time intervals and sounds. This device does not teach, anticipate or have the any of the capacities required to effect any "discernable points" that would be perceived as anything resembling spatial directional cues.

20. Applicant agrees that animals such as dogs can smell scents including pheromones and that these smells, like sights and sounds, can be exciting. However, Watson can do nothing but spray in a timing-incompetent and non-sensical (from a spatial direction-encoding perspective) direction in response to a dog not barking for a long enough period of time.

This response capacity is not in any way real-time capable – in fact its design specifically precludes such a capability. The timer might have another 10 minutes before deciding that the dog has been good enough for a thrill – which may put the response fully minutes after the needed "direction". Watson neither anticipates nor teaches the use of smells, etc. responsive to an immediate or instant situation; such a claim being obviously inappropriate in a system where behavior and response is graded by a how many actions (all of them bad by definition) occurred over a summed period of time adequate for multiple bad behaviors to be summed.

Also, Watson's perfume spraying dog collar (Watson does not anticipate pheromones) does not have the physical capacity to recognize spatial body attitudes, the capacity to understand what to do with them if it did, and it does not have the ability to direct the body to directionally specific actions.

#### **Amendments to the claims:**

Some of the claims are also amended below. This is not to modify the substance claims but to remove excessive length and uses of the word "or" which has been considered indefinite in some court defenses. I do not have an attorney and